

REMARKS

Claims 1-34 remain pending in this application.

The Examiner rejected claims 1-34 under 35 USC § 102(b) as being anticipated by U.S. Patent 5,877,861 (*Ausschnitt*). Applicants respectfully traverse this rejection.

Applicants acknowledge and appreciate that the Examiner has withdrawn the previous rejections and objections under 35 USC 112 as well as the previous rejections under 35 USC 102. Applicants respectfully assert that the prior art (U.S. Patent 5,877,861 (*Ausschnitt*)) used by the Examiner's to provide new ground of rejection, does not disclose, teach or suggest all of the elements of the claims of the present invention.

Applicants respectfully assert that *Ausschnitt* does not teach, disclose or suggests all of the elements of claim 1 of the present invention. In the Office Action dated July, 27, 2005, the Examiner inadvertently misconstrues various terms used by *Ausschnitt* to read upon elements of claim 1 of the present invention. For example, the Examiner considers "level-to-level metrology" in *Ausschnitt* to be equivalent as wafer-mean error metrology analysis of the present invention. Other misapplications were also made in the Office Action, as described below. *Ausschnitt* merely discloses performing analysis of within-level overlay errors as well as of level-to-level field overlay errors. The level-to-level disclosure in *Ausschnitt* merely refers to multiple layers of the wafers, such as the "level A" 66 and the "level B" 60. See Figure 8, column 3, lines 44-49. *Ausschnitt* also refers to the fact that it is directed to the absolute error relating to level A and level B and not necessarily to the relative error between level A and level B. See column 3, lines 49-52. Applicants respectfully assert that the Examiner misunderstands the level-to-level error disclosed by *Ausschnitt*. *Ausschnitt* is clear as to the fact that the level-

to-level term relates to level-to-level field overlay error and not to the wafer-mean error called for by claims of the present invention. *See* column 4, lines 56-60. In other words, *Ausschnitt* is concerned with alignment of a field in level B to a field in level A and not to the wafer-mean error called for by claims of the present invention.

Ausschnitt also refers to within-level field overlay errors. In other words, *Ausschnitt* is merely referring to checking for errors on one layer. This assertion is further bolstered by the description in block 82 of Figure 12, which determines whether if the analysis relates to a first level; if so, then the level A to level A overlay error is measured. *See*, Figure 12. If the analysis relates to an Nth level, then the level A to level B error is calculated. *Id.* Subsequently, the level to level error, which the Examiner mistakenly considers as being equivalent to wafer-mean error, is further described in block 86, which calls for calculating field terms after measuring the level A to level B overlay error. *See* Figure 12. Therefore, it is clear that the level-to-level description of *Ausschnitt* does not equate to wafer-mean error, but merely refers to overlay errors between one layer to another. Therefore, the Examiner erred in equating level-to-level metrology of *Ausschnitt*, to the wafer mean error metrology called for by claim 1 of the present invention. Therefore, Applicants respectfully assert that the element of determining a wafer-mean error is not disclosed, taught or suggested by *Ausschnitt*.

Furthermore, the Examiner asserted that the comparison of the field-mean error to the wafer-mean error element called for by claim 1 of the present invention is disclosed by the mere assertion in the summary of the invention relating to a description that correction factors are calculated from field-term error, alignment errors, and the level-to-level overlay measurement using the processor. Firstly, as Applicants described above, level-to-level error does not teach,

disclose or suggest wafer-mean error. Further, nowhere does *Ausschnitt* disclose comparing the field-mean error to the wafer-mean error. The mere assertion in *Ausschnitt* that the correction factors are calculated from the field-mean, field-term alignment errors and the level-to-level overlay measurements, does not equate to a comparison between the two. Therefore, the claim 1 element of comparing the field-mean error to the wafer-mean error is also not taught, disclosed or suggested by *Ausschnitt*.

Additionally, the Examiner attempts to read upon the element of performing residual error analysis based upon the field-to-field analysis and the wafer-mean error by citing col. 6, line 39, which refers to an equation using least squares best fit technique. The Examiner also points to col. 1, line 20, referring to a mere assertion relating to keeping an alignment error between levels below acceptable product tolerance. Applicants respectfully assert that these portions of the disclosure of *Ausschnitt* does not teach, disclose or suggest the residual error analysis called for by claim 1 of the present invention. These calculations merely refer to errors relating to a level to level (i.e., layer to layer) field error, and does not disclose or suggest the residual error analysis based upon field-to-field analysis and the wafer-mean error, as called for by claim 1 of the present invention. Nowhere does *Ausschnitt* refer to performing a residual-error analysis based upon the field-to-field analysis as well as the wafer-mean analysis. Additionally, the residual-error analysis of the claim 1 includes determining whether significant residual error exist as a result of comparing the residual error with a predetermined tolerance. *Ausschnitt* does not make such comparison. The mere assertion of the alignment error between levels being below product tolerance does not read upon this limitation. Furthermore, as described above, *Ausschnitt* does not disclose a residual-error analysis being based upon a comparison between

wafer-mean error and a field-mean error. First of all, as described above, *Ausschnitt* does not disclose determining a wafer-mean error. Secondly, *Ausschnitt* does not disclose or suggest determining comparing the wafer-mean error to the field-mean error. Therefore, several elements of claim 1 of the present invention is not taught, disclosed, or suggested by *Ausschnitt*. Therefore, claim 1 of the present invention is allowable for at least the reasons cited above.

Furthermore, claim 11 calls for a system to determine a field-mean error and a wafer-mean error and to perform a comparison to generate modification data, which is not taught or suggest by *Ausschnitt* for at least the reasons cited herein. Claims 15 and 16 call for apparatuses to determine a field-mean error and a wafer-mean error to perform a comparison in order to determine a residual error, which are elements that are not taught, disclose or suggested by *Ausschnitt* for at least the reasons cited above. Additionally, claims 26 and 29 respectively call for a system and an apparatus for determining a field-mean error and a wafer-mean error to perform a comparison in order to determine a residual error, which are elements that are not taught, disclose or suggested by *Ausschnitt* for at least the reasons cited above. Therefore, independent claims 1, 11, 15, 16, 26, and 29 are allowable for at least the reasons cited above.

Independent claims 1, 11, 15, and 16, are allowable for at least the reasons cited above. Additionally, dependent claims 2-10, 12-14, and 17-25, which depend from independent claims 1, 11, and 16, respectively, are also allowable for at least the reasons cited above.

In light of the arguments presented above, Applicants respectfully assert that claims 1-34 are allowable. In light of the arguments presented above, a Notice of Allowance is respectfully solicited.

If for any reason the Examiner finds the application other than in condition for allowance, the **Examiner is requested to call the undersigned attorney** at the Houston, Texas telephone number (713) 934-4069 to discuss the steps necessary for placing the application in condition for allowance.

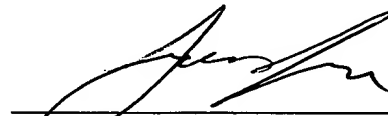
Respectfully submitted,

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